



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,963	07/26/2001	George Earl Peterson	18	8322

7590

05/28/2003

Michael J. Urbano, Esq.
1445 Princeton Drive
Bethlehem, PA 18017-9166

EXAMINER

CHEN, SHIH CHAO

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/915,963

Applicant(s)

PETERSON, GEORGE EARL

Examiner

Shih-Chao Chen

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-13, 15-19, 21 and 23-25 is/are rejected.
- 7) ☒ Claim(s) 4, 14, 20 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 11 July 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. In view of the appeal brief filed on March 14, 2003, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 2 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Despite applicant's disagreement, it remains the examiner's position that the limitation defining "the phase velocity being greater than the speed of light" still defies conventional theory of physics.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1, 3, 5-9, 11, 13 and 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Wicks et al. (US H2016 H).

Regarding claim 1, Wicks et al. teaches in figures 1-5 an antenna structure comprising: at least one antenna element [mono-blade antenna element], that at least one antenna element having at least one taper (See Figure 4); and a symmetrical ground plane [ground plane] (i.e. the ground plane extends to infinity, this makes the ground plane symmetrical since extending to infinity is a form of translational symmetry) coupled with the at least one antenna element [mono-blade antenna element].

Regarding claim 3, Wicks et al. teaches in figures 1-5 the antenna structure wherein the taper comprises a parabolic profile.

Regarding claim 5, Wicks et al. teaches in figures 1-5 the antenna structure wherein the at least one antenna element [mono-blade antenna element] is positioned at an angle from the symmetrical ground plane [ground plane].

Regarding claim 6, Wicks et al. teaches in figures 1-5 the antenna structure wherein the angle is about 90 degree with respect to the x-, y- and z-axes (See Figure 4).

Regarding claim 7, Wicks et al. teaches in figures 1-5 the antenna structure wherein the at least one antenna element [mono-blade antenna element] is coupled with the symmetrical ground plane [ground plane] by means of an unbalanced impedance [coaxial transmission line feed].

Regarding claim 8, Wicks et al. teaches in figures 1-5 the antenna structure wherein the unbalanced impedance [coaxial transmission line feed] comprises a coaxial cable.

Regarding claim 9, Wicks et al. teaches in figures 1-5 the antenna structure wherein a first conductor of the unbalanced impedance (See Figure 4) mechanically couples the at least one antenna element [mono-blade antenna element] with the symmetrical ground plane [ground plane].

Regarding claim 11, Wicks et al. teaches in figures 1-5 an antenna structure comprising: an array of at least two antenna elements (See Figure 5), each antenna element [mono-blade antenna element] having at least one taper; a symmetrical ground plane [ground plane] (i.e. the ground plane extends to infinity, this makes the ground plane symmetrical since extending to infinity is a form of translational symmetry); and an

unbalanced impedance [coaxial transmission line feed] for coupling the array of at least two antenna elements with the symmetrical ground plane [ground plane] (See col. 4, lines 7-13).

Regarding claim 13, Wicks et al. teaches in figures 1-5 the antenna structure wherein the taper of at least one antenna element of the array comprises a parabolic profile.

Regarding claim 15, Wicks et al. teaches in figures 1-5 the antenna structure wherein each antenna element [mono-blade antenna element] of the array is positioned at an angle from the symmetrical ground plane [ground plane].

Regarding claim 16, Wicks et al. teaches in figures 1-5 the antenna structure wherein the angle for each antenna element is about 90 degree with respect to the x-, y- and z-axes (See Figure 4).

Regarding claim 17, Wicks et al. teaches in figures 1-5 the antenna structure wherein the unbalanced impedance [coaxial transmission line feed] comprises a coaxial cable.

Regarding claim 18, Wicks et al. teaches in figures 1-5 the antenna structure wherein a first conductor of the unbalanced impedance (See Figure 4) mechanically couples each antenna element of the array with the symmetrical ground plane [ground plane].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2821

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10, 19, 21 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wicks et al. (Cited above) in view of Ogot et al. (U.S. Patent No. 5,648,787).

Wicks et al. teaches every feature of the claimed invention except for the symmetrical ground plane is disk-shaped.

Ogot et al. teaches in figure 3A the symmetrical ground plane [210, 250] is disk-shaped.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the infinite ground plane as shown in Wicks et al. by using the symmetrical ground plane is disk-shaped as taught by Ogot et al. in order to maximize the surface area of the ground plane perpendicular to the transmission element, and provides a uniform transmission pattern (See col. 4, lines 66-67 and col. 5, lines 1-3).

Allowable Subject Matter

7. Claims 4, 14, 20 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach or suggest the antenna structure supports a cigar-like directional three-dimensional beam pattern and a butterfly wing-like directional three-dimensional beam pattern as required by claims 4, 14 and 22.

The prior art does not disclose or fairly suggest the antenna structure further comprising a slow wave antenna to widen the directivity of the antenna structure as required by claim 20.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-Chao Chen whose telephone number is (703) 306-2721. The examiner can normally be reached on Monday-Friday from 7 AM to 4:30 PM, First Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (703) 308-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-5841 for After Final communications.

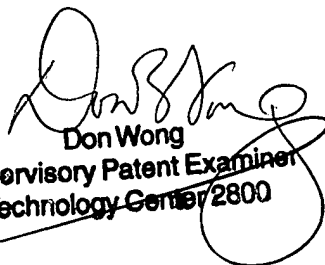
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Shih-Chao Chen
Examiner
Art Unit 2821

Application/Control Number: 09/915,963
Art Unit: 2821

Page 8

SXC
May 19, 2003



Don Wong
Supervisory Patent Examiner
Technology Center 2800